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An Outlook for the Future
Ferrari's Boom

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Abstract

Ferrari is one of the world's leading luxury brand for designing, developing, manufacturing and selling cars. With a growing stock price, Ferrari's potential is showing. Affected by the growth in Formula 1 engagement and soon launching its first SUV, Ferrari's revenues are expected to boom. The evaluation conducted displays a bright future for the company. However, some risks also arise, mainly the fact Ferrari's multiples are very inflated, even for a luxury company. Another concern regarding its cash flows might arise, as they could represent lost investment opportunities. Nevertheless, due to the potential share price and historical data, a "BUY" decision is recommended.

Keywords (up to four)

Ferrari
Luxury
Automotive
SUV

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This report is part of the Ferrari report (annexed) and should be read has an integral part of it.

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Key Drivers

Ultra-High Net Worth Individuals

The correlation in the past between the growth of these individuals and luxury car sales has been very high.

From 2015 to 2019 the number of UHNWI worldwide grew from 392.038 to 509.252, an increase of 30%. In the same period, the revenue of luxury car sales worldwide went from €405 billion to €550 billion, an increase of 35%.

The revenue in luxury car sales very slightly outpaced the growth of UHNWI, however, considering the exceptional increase from 2018 to 2019 in luxury car sales, and the subsequent slump in sales in 2020, we believe it makes sense to forecast the growth of luxury car sales along with the projection for the growth in number of UHNWI, seeing how tightly they have correlated in the past.

Formula 1 acquisition by Liberty Media

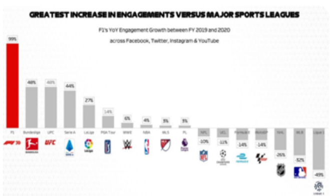

Figure 1: *Engagement Growth across Facebook, Twitter, Instagram and YouTube*
Source: Formula1.com

In 2017 Liberty Media acquired a controlling share in Formula 1 and has since then followed a strategic path with the intent to increase viewership and penetrate key markets.

As part of this strategy, F1 started to bet on social media, which was neglected by its previous owners. This has been an amazing success, and the company saw a great deal of growth in this area. In 2020 F1 was by far the sport with the largest increase in engagement on social media, doubling their numbers YoY.

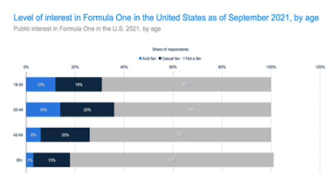

Figure 2: *Level of Interest in F1 in the US, by age (September 2021)*
Source: Statista

As part of this policy to engage younger audiences Liberty Media has partnered with Netflix to produce a series documenting each championship since 2018. This has arguably been the root cause of F1s success in the last few years, with multiple articles being written about how it has helped extend the reach of F1. The Netflix series has reached an estimated 50 million viewers and is a large part of the reason for the increased reach F1 is experiencing.

Reaching younger audiences was not the only goal set by Liberty Media, however. Their plans also included penetrating new markets, in particular the US.

The US is seen as being a huge untapped market for Formula 1, because the level of interest there is well below most western countries, and the country has a population of 330 million.

Figure 3: *Liberty Media stock price*
Source: Google

ESPN reported the sport's viewership had grown from around **547,000** people in 2018, when the Netflix show launched, to almost **1 million** in 2021. It is expected that Formula 1 will continue to grow in the country for the foreseeable future.

Since the beginning of 2017, after the acquisition by Liberty Media, F1's stock price has grown by almost 80%, further confirming the positive outlook the market predicts for F1.

Increase in f1 success doesn't necessarily translate into higher revenues for Ferrari, in the case where the company falters in their car development, and consequently becomes less relevant as their team's performance worsens. Not only due to decreases in sponsorship, but it would also make it less likely that they would be able to sell their engines to other F1 teams, which is also a portion of their revenue.

However, all else being equal, we expect that an increase in the success of Formula 1 can translate into an increase in profits for Ferrari.

Additionally, in 2021 Formula 1 introduced a cost cap measure, which was aimed at reducing the difference in spending between the teams. The spending on the development of the car for 2021 was capped at €145 million. For the 2022 car the cap will go down to €135 million and is expected to stay there for the foreseeable future. The impact that this will have on Ferrari's R&D is not very clear, however, for a couple of reasons: Firstly, Ferrari doesn't split it's R&D expenses between Formula 1 and road cars. Secondly, the way that the cost cap will be introduced carries with it many exceptions regarding what counts as costs, for example salaries of engineers executives and drivers. The estimates for Ferrari's R&D spending on F1 vary all the way from €400 million to €600million. The problem here is determining what counts for the cost cap. As such, we decided to conservatively determine a reduction of €40million and €50million for 2021 and 2022 respectively.

Engines

Engine sales represent a small proportion of Ferrari's core sales, but still account for between 9% and 5% of the company's sales depending on the year. This segment can be divided in two different parts: The first and most important is the sale of engines to Maserati, representing around 70% of sales, and the second part are the engine rentals to other F1 teams, Alfa Romeo and Haas.

Starting from 2023 Ferrari will no longer sell engines to Maserati, which will represent a significant decrease in the sales in this segment, whereas the other component is likely to experience a slight increase. Ferrari's engine revenues are mostly dependent on the number of teams that rent their engines and in the number of races that happen per year. As for the teams, they are likely to remain the same for the foreseeable future, however the number of races was a historical record 22 this year and is set to increase to 23 next year and remain there for the foreseeable future, thus increasing slightly revenues, but not nearly enough to compensate for the losses from losing Maserati as a customer.

SUV

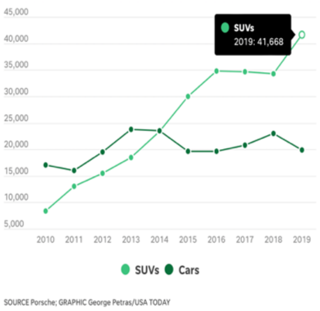

Figure 4: *SUV Sales US (Porsche)*
Source: Porsche

Ferrari is set to deliver an SUV in 2023, called *Purosangue*, this is something that had long been feared would compromise the brand's Image, but many recent examples have shown this not to be so, at least in terms of sales. Porsche introduced its first SUV in 2003, the Cayenne, and at the time there were similar worries that this would dilute the company's brand.

In Porsche's case, the sales of SUVs have been said by many to have saved the company. They now represent more than half of the company's sales at 67%, where the sales for the rest of the cars have remained relatively stable, only growing 17% since 2010, whereas SUV sales have grown 400% in the same period.

Two other examples of luxury sport car brands that have introduced SUVs in recent years are Lamborghini and Aston Martin. The results have been extremely positive to say the least.

Lamborghini which is more comparable to Ferrari in terms of branding and in terms of the prices of their cars than Porsche, have also introduced an SUV recently, starting sales of the model in late 2018. The car represents already more than half the sales of the company. This year through September, it accounted for 59% of Sales. That is an astounding number, after only 3 years in the market.

Aston Martin too has seen tremendous success with the introduction of its SUV in July 2020. Between January and June of 2021 Aston Martin saw an increase in sales of more than 124%, led by its SUV model, which account for more than half of sales. They are planning on introducing further SUV models.

Based on these examples from the industry, we can predict that the introduction of an SUV will have a significant impact on Ferrari's sales. We conservatively estimate that the new model will lead to an increase of 10% in sales in 2023, 20% in 2024, and thereafter increasing 5% per year until reaching the value of 35% in 2027. These values are low compared to the examples we have seen from Lamborghini, Aston Martin, and Porsche.

Ferrari Roma

The SUV which is expected to be revealed in 2022 is not the first departure from the brand from its traditional market. Already in 2020 Ferrari has made strides in this direction, with the introduction of the Ferrari Roma. For years the company guided its decisions according to what they believed was a continuation of the spirit of its founder, Enzo Ferrari. To him, it was unthinkable to have the company produce a four-door car.

At a starting price of $218.670 the Roma is the most affordable Ferrari yet produced, compared to an average selling price of $360.000 in 2020. The company expects that for 70% of the owners of the Roma this will be their first Ferrari. The company has said they are targeting Porsche 911 and Aston Martin customers, although the car is substantially more expensive than the 911, which starts at $100.000 in the U.S.

Thus, we estimate that the Ferrari Roma will also have an outsized impact on Ferrari, much like the SUV model, and we believe it makes sense to look at it separately from other models. The model will bring in new customers which would have otherwise not considered a Ferrari. We estimate an increase of 5% in sales with the introduction of the Roma.

Intrinsic Valuation

The research developed showed a price per share of 337.20€ by 2022. In order to reach this number, a Discounted Cash Flow analysis was performed, which required the estimation and forecast of the financial statements. As Ferrari operates in different industries, the forecasts had to be done segmenting the company according to business units.

Weighted Average Cost of Capital

The cost of equity was calculated using the CAPM. It accounted for Italy 10-Year Government Bonds (risk-free rate) and a Market Risk Premium of 6% (Source: IESE, Social Science Research Network, Italy, June 2021).

COST OF EQUITY	
Beta Unlevered (median)	0,66
Tax Rate	20,40%
Net Debt/Equity	52%
Beta Debt	-11,14%
Beta Relevered	0,98
Cost of Equity	6,75%

Figure 5: *Cost of Equity*
Source: Own Calculations

Ferrari's beta was calculated by doing a regression between the market risk premium (MSCI world) and Ferrari risk premium return (deducted 10 years bonds US). It accounted for 260 data points of weekly data from January 2016 and December 2020. The regression resulted on a raw beta of 0,71 with a standard error of 0,09. As it is lower than one, it is less sensitive to market changes, being less volatile.

COST OF DEBT	
	Ferrari
ISIN	XS2180509999
Coupon	1,50%
Maturity	27/05/2025
Today	16/12/2021
Days	1258
Years To Maturity	3,446575342
Current Price	103,56
Payment Period	1
YTM	0,004555396
Credit Rating (S&P Global)	A-
Probability of Default	1,92%
Loss Given Default	55,90%
Cost of Debt	0,002115257
Implied Beta Debt	-11,14%

Figure 6: *Cost of Debt*
Source: Own Calculations

To improve the beta estimation by decreasing the effect of idiosyncratic shocks, weekly data from the same period was regressed against the market portfolio for the segment peers. A cross-check beta resulted from the median of the 7 unlevered betas (Ferrari and its peers), relevered for Ferrari's target capital structure. This yielded a beta of 0.98 and a cost of equity of 6.75%.

The cost of debt (0.21%) was calculated using Ferrari's corporate bonds (ISIN: XS2180509999), its S&P rating (A-) and Moody's Annual Default Study, based on the average of the bond approach.

Based on the computed parameters, the weighted average cost of capital (WACC) is 4.48%.

Forecasts

Following the key drivers' analysis, we reached the conclusion that Ferrari's future as a company will be affected by the growth of their legacy line-up of vehicles; the introduction of two new models which depart substantially from their classic offerings; the cost cutting measures introduced in formula 1 and the departure of Maserati as a client.

In order to determine the evolution of Ferrari's classic line-up of vehicles we first looked at their market share which has hovered between 0.51% in 2015 and 0.56% in 2020 and forecasted that this would remain at 0.56% until 2030. More key for the valuation was the determination of the evolution of the market size.

We believe that the target market for Ferrari consists in the population of Ultra High Net worth Individuals, those with investable assets above €30 million. The data corroborates this as the growth in the number of these individuals between 2015 and 2019 (30%) closely tracked the growth in revenue from the sale of luxury cars (35%). As such, we calculated the growth in the sales of their classic line-up at an increase of 4.93% per year until 2030, which is consistent with the estimates for the increase in UHNWI for the period of 2020-2025, after which we couldn't find any estimates, and therefore assumed a continuation of this level of growth until 2030. Thus, we estimate their legacy line-up will increase its' sales from €2.9 billion in 2019 to €6.4 billion in 2030.

We estimate that the Ferrari Roma will lead to an increase in sales of 2.5% this year and 5% from 2022 to 2030, whereas the introduction of the SUV segment will lead to an increase of 10% in 2023, 20% in 2024, and thereafter an increase of 5% each year until reaching 35% in 2027, where it will remain until 2030.

Ferrari will stop selling engines to Ferrari in 2023, and this will represent a disappearance of around €200 million in revenue per year. Revenue sales to other Formula 1 teams will increase slightly, mostly due to the projected increase in the number of races. Revenues from Formula 1 will also increase slightly, from €538 million in 2019 to €805 million in 2030, in part due to an increase in the number of races. Additionally, we also estimate that Ferrari saved €40 million in R&D costs in 2021 and €50 million in 2022 and thereafter until 2030 due to the introduction of the cost cap.

The cost of sales has hovered between 58% and 52% since 2015 and therefore we estimate that it will remain stable at 50% until 2030.

Sensitivity Analysis

In order to make a more grounded buy/sell recommendation we decided to perform a few different sensitivity analyses on the most impactful forecasts and assumptions, in order to better protect investors from possible downturns or failures in our own assumptions.

Firstly, we created a data table crossing terminal growth rate (g) and Weighted average cost of capital. Here it would take a change in 1% in the WACC value in order to change our recommendation from a buy to a hold, or a reduction of 1% in terminal growth rate to change the recommendation from buy to hold. In only 3 out of the 25 scenarios would a sell recommendation be warranted.

		g				
	€ 337,20	1,50%	2,00%	2,50%	3,00%	3,50%
Wacc	3,50%	€313,20	€432,71	€671,75	€1 388,85	#DIV/0!
	4,00%	€261,94	€330,53	€444,83	€673,45	€1 359,31
	4,47%	€224,18	€269,01	€336,61	€450,19	€680,85
	5,00%	€191,69	€221,58	€263,42	€326,19	€430,80
	5,50%	€168,07	€189,52	€218,11	€258,15	€318,21

Figure 7: *Sensitivity Analysis*
Source: Own Calculations

Besides this we also looked at 3 of our most impactful forecasts to see how they would affect the company if they didn't meet or exceeded our expectations.

Firstly, we looked at the impact from the growth of UHNWI in our forecasted price, seeing as how the growth in the number of these individuals has a large impact on the sales of legacy cars and, which represent the largest source of revenues for Ferrari. Our expected value for the growth of these individuals is 4.93% per year, our low growth scenario puts their growth at 2.5% and the highest estimate at 7.5%. From this analysis we were able to confirm the soundness of our buy recommendation as the worst-case scenario (€276 per share] is still well above the current price of the company on the market (€228 per share).

	Sensitivity to growth of UHNWI		
	Low growth of UHNWI	Expected growth of UHNWI	High growth of UHNWI
Share Value	€276,75	€337,20	€411,26

Figure 8: *Sensitivity Analysis*
Source: Own Calculations

Our second analysis consisted in applying a multiple to our SUV projections whereby, we applied a 50% reduction in our low growth scenario and a 50% increase in our high growth scenario, which would put Ferrari's SUV sales closer to the numbers achieved by Porsche, Lamborghini and Aston Martin. From this analysis we were able to confirm the soundness of our buy recommendation as the low growth scenario (€292 per share) still represents a 28% upside potential. We consider the high estimate to be particularly important in this scenario, as we believe that our estimates for the introduction of the SUV to be quite conservative seeing the success that Porsche, Lamborghini and Aston Martin had with the introduction of their SUVs.

	Sensitivity to success of SUV introduction		
	Low growth of SUV sales	Expected growth of SUV sales	High growth of SUV sales
Share Value	€292,96	€337,20	€381,39

Figure 9: *Sensitivity Analysis*
Source: Own Calculations

Our third analysis consisted in looking at how a change in the percentage represented by cost of sales would affect Ferrari. Ferrari's cost of sales has wobbled between 48% and 52% since 2015, but for this analysis we used more extreme deviations (55% for the high estimate and 45% for the low), as we were particularly interested in what would happen in a significantly negative scenario where cost of sales increased a lot. Still, if this is the only variable changing, the target price would still be left at €274 per share (20% upside).

	Sensitivity to cost increase		
	High cost of sales	Status quo cost of sales	Low cost of sales
Share Value	€274,70	€337,20	€399,88

Figure 10: *Sensitivity Analysis*
Source: Own Calculations

Our fourth analysis consists of a table where we cross-check the second and third scenarios, as we consider these forecasts to be the most important ones in determining the future of the company. The conclusion supports our buy recommendation, seeing as even in the worst-case scenario the target price would remain above the current price of €228 per share.

Scenarios		Growth of UHNWI		
		Low growth of UHNWI	Expected growth of UHNWI	High growth of UHNWI
Success of SUV introduction	Low	€239,72	€292,96	€358,18
	Expected	€276,75	€337,20	€411,26
	High	€313,75	€381,39	€464,26

Figure 11: *Sensitivity Analysis*
Source: Own Calculations

Finally, for our fifth and last scenario, we decided to combine all of the factors above (Growth of UHNWI, success of SUV introduction, and variance in cost of sales) into three scenarios: Downturn, expected, and Upturn. In this instance our expected scenario corresponds to the price that we actually expect the share should be worth from our CDF analysis, in the downturn we combine the negative forecast deviances from the three factors, and in the upturn we combine the positive forecast deviances. Our downturn scenario presents a negative picture, which although extremely unlikely from our estimations, could serve as a warning to the most risk averse investors.

Absolute scenarios	Downturn scenario	Expected Scenario	Upturn Scenario
	€193,26	€337,20	€549,20

Figure 12: *Sensitivity Analysis*
Source: Own Calculations

Relative Valuation

Multiples

To complement the DCF approach, a relative valuation was performed using data from the 6 previously chosen peers – all luxury companies. When looking at these companies it is clear their multiples are amplified when compared to automakers – in fact a relative valuation using different comparable (a mix of automakers and luxury companies) resulted on massive discrepancy between Ferrari's implied share price and its value today, which corroborates the idea that Ferrari differentiates from other car companies.

This valuation method was based on equity multiples: P/E (price-to-earning) and P/B (price-to-book) of the luxury sector. The P/E represents a company's share price as a multiple of its earnings. Due to structural changes in the industry and the economy, Five-Year Price-to-Book, Historic Price-to-Book, Forward-looking Price-to-Earnings were used to incorporate the past, present and future of the market and of analyst expectations. The P/B measures the firm's market capitalization relative to its book value.

Company Name		Market Cap (Millions)
Ferrari	€	36 408,40
Hermes International SCA	€	92 858,90
Burberry Group PLC	£	5 364,40
Compagnie Financiere Richemont SA	€	28 295,30
Kering SA	€	74 254,20
LVMH Moet Hennessy Louis Vuitton SE	€	257 440,40
Moncler SpA	€	12 673,70

Figure 14: *Market Capitalization*
Source: Own Calculations

The median of the four multiples implied a share price of 157€ in 2022, which is lower than the derived intrinsic value. This is largely influenced by the P/B multiple, linked to the lowest valuation due to outliers' behavior (Exhibit 26).

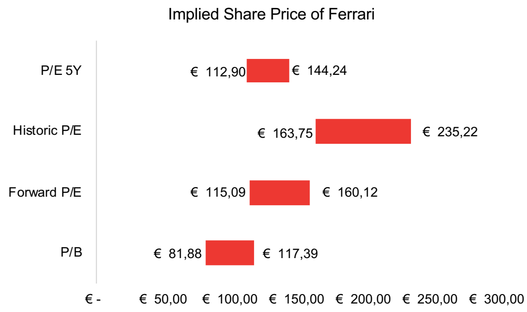

Figure 13: *Relative Valuation*
Source: Own Calculations

Final recommendation

The outlook for the growth of Ultra High Net Worth Individuals forebodes an extremely positive outlook for the future of Ferrari, should the company be able to maintain its' market share for luxury vehicles. The market size is set to grow at a fast pace, seeing as the increase in wealthy individuals has been the main driver for the increase in the sale of luxury vehicles. Additionally, after the success of many of its rivals in introducing SUVs to their line-ups, Ferrari can be confident that they too can expect a considerable amount of success with this new addition to their offerings. For the most risk averse, there is a downturn scenario where we estimate that the value of the share could fall below its' current value, and multiple valuations also fall below our own estimates. However, for the large majority of the scenarios that we analyzed, Ferrari seems to present a very good opportunity. The final recommendation is to "BUY".